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TUESDAY, JUNE 25, 2002

NEW ORLEANS EDITION

How south Louisiana is growing more vulnerable to a catastrophic hurricane

PART THREE OF A FIVE-PART SERIES

A photograph of a man with grey hair, shirtless and wearing light-colored trousers, sitting on a concrete step amidst the wreckage of a destroyed house. The background shows the remains of a building with exposed wooden framing and debris scattered everywhere. The sky is overcast.

After Hurricane Andrew, insurers sharply raised rates, and many pulled out of coastal areas. Particularly hard hit was Florida, leaving rubble where many homes stood.

AP FILE PHOTO

Insurance companies are pulling out. Oil and gas infrastructure is threatened.
Flood-prone homes may be abandoned.

Louisiana's economy is feeling the pinch from the risk of hurricane damage.



STAFF PHOTO BY ELLIS LUCIA

As more people build in flood-prone areas, the threat of widespread damage from a major storm grows. And as the threat increases, so does the cost of protection. Here, developers in St. Charles Parish have built levees around the Willowlake subdivision. The levees offer some protection but may be offset by the erosion and loss of wetlands created by development.

INSIDE

BUILDING BETTER • Tougher building codes would ensure that more structures in New Orleans can survive a catastrophic storm. **SEE A-8**

SEEKING SHELTER • Three years after Hurricane Floyd, some North Carolinians are still living in temporary housing. **SEE A-9**

KEEPING YOUR ROOF ON • Installing metal roof clips and storm shutters would help more homes survive the high winds and flying debris. **SEE A-10**

WEDNESDAY

TEMPTING FATE • As coasts and other vulnerable areas across the country grow more populated, natural disasters are getting more expensive.

Stories by John McQuaid and Mark Schleifstein Staff writers
Photos by Ellis Lucia Staff photographer • **Graphics by Daniel Swenson** Staff artist

WHEN insurance bills started coming due this spring, officials in local governments and school districts were stunned. In St. Charles Parish, premiums to insure the school district's properties more than tripled, forcing officials to devise a complex scheme to buy insurance from five different companies to keep costs down.

In Jefferson Parish, most of the buildings and other property owned by the government are not currently insured at all. The

parish could not find an insurance company to cover more than a third of the value of the \$300 million worth of property, and the cost of doing that was a budget-busting \$6 million in a total budget of \$318.5 million. Officials are trying to find a cheaper alternative. But if a hurricane strikes first, taxpayers could have to foot the bill.

After the Sept. 11 terrorist attacks, insurance companies took a second look at the risks they were willing to shoulder and how much

See **ECONOMY**, A-6

By Brian Thevenot
Staff writer

The Orleans Parish School Board took action on three major issues Monday: buying out the contract of departing schools chief Al Davis for \$105,000, closing the controversial New Directions Alternative

School, and creating a committee to study concerns about the proposed New Millennium Schools project.

The \$105,000 proposal was submitted by Davis and accepted unanimously by the board, which got off much

See **BOARD, A-3**



AP PHOTO

Five people were killed and at least 36 were injured Monday when a bus taking a group to a church camp in Ruston slammed into a concrete pillar in Texas. **See story, A-2**

The contractor thought most likely to stop working when money for federal flood-control projects in Orleans and Joffre

projects in Orleans and Jefferson parishes dries up Wednesday is looking for ways to avoid shutting down its projects in Uptown New Orleans, a company official said late Monday.

Joel Morrow, local manager for Angelo Infrate Construction LLC, said he was trying to find a way to keep his crews on the job, even though the company earlier told the Army Corps of Engineers that it would stop work after today. But he said he didn't know what would occur.

"We're hopeful we'll be able

to continue,” Morrow said. “We will work for as long as we can. We want to finish the projects and clean up the area. That’s the best scenario for everyone.”

Iafrate is building a \$19.4 million underground canal along Napoleon Avenue, which is due for completion in January, and a \$13.9 million underground canal along Eagle Street in Hollygrove, due for completion in August 2003.

Iafate is the only contractor that notified the corps it intended to halt work when money for the Southeast Louisiana Flood Control Program, known as SELA, runs out after today.

Contractors on 16 other projects did not contact the corps, said Beth Cottone, chief project manager for the corps' local office, and those companies presumably intend to continue working in the expectation they

See **PROJECTS, A-L**

'Peace requires a new and different Palestinian leadership so that a Palestinian state can be born,' President Bush said Monday. Bush would not say whether he will cease all contact with Yasser Arafat.

WASHING AWAY

As the coast erodes and land sinks, people as well as industries are becoming ever more exposed to the high winds, storm surges and inland flooding that accompany hurricanes. The cost of protecting us and keeping the land habitable is increasingly taxing the Louisiana economy.



STAFF PHOTO BY ELLIS LUCIA

Critics of coastal development fear that the next big storm will be followed by a massive insurance payout. The consequences may include a pullout by more insurance companies and a spike in rates, particularly as development of second homes and fishing camps continues in vulnerable coastal areas. Jay Culotta of Denham Springs installs gutters and decking for a contractor in the Southern Comfort subdivision on the Houma Navigational Canal in Dulac.



STAFF FILE PHOTO BY RIC FRANCIS

Louisiana tops the nation in the number of repeat claims for flooding, one of the reasons cited for the ever-rising cost of insurance. In areas that regularly flood, such as Irish Bayou in eastern New Orleans, seen here after Tropical Storm Frances in 1998, some residents have developed a post-flooding cleanup routine: Clean out muck and debris, shoo out vermin, scoop up snakes and take down furniture and possessions that have been stacked up, elevated away from floodwaters.

Breaks for the coast cut

After Hurricane Andrew in 1992 stunned the insurance industry with unexpected 11-figure losses, insurance companies gradually restructured the way they cover coastal areas. Part of the effort is making sure they have sufficient resources to cover a catastrophe. They now use a combination of more readily available, but sometimes expensive, reinsurance coverage, risk-based securities and other ways of spreading the costs of the added risk.

A key element of the changes was to stop giving a break to coastal areas, which had for years enjoyed rates subsidized by less-disaster-prone customers elsewhere in the country. Until Andrew, companies

businesses and more infrastructure are in place. East Jefferson, a semi-rural area when a hurricane flooded it in September 1947, is now a densely populated suburb.

"In 1965, Betsy cost \$5 million to State Farm," Stephenson said. "Projections looking at the same storm say it would cost us \$1 billion today because there has been a huge proliferation of building on the same land, and the value of the land and what's on it has increased dramatically."

Rising insurance costs are the most obvious result of these trends. Two main sources of insurance are available: The federal government offers flood insurance through private companies, which themselves cover wind and other storm-related damage.

Insurance costs explode in risk-prone areas

ECONOMY, from A-1

they charged for taking them on. Because of the annual hurricane threat — and the possibility of a storm that tops levees and inundates New Orleans and surrounding suburbs — south Louisiana is one of the riskiest places in the United States.

"A lot of it has to do with insurance companies realizing the potential liability that they have, that one incident could wipe out a company's reserves," said St. Charles school district Comptroller Jim Malone. "If they insure in St. Charles, Jefferson and Orleans, then one hurricane large enough to have a significant amount of destruction could devastate their company."

The Sept. 11 effect accentuated a trend already under way among insurance companies: to make people, businesses and governments shoulder a bigger burden in risky areas, especially coastal zones prone to hurricanes.

"If folks choose to live along the coast, there is a need to have them bear some of the responsibility and risk of living in an area that is vulnerable to such an obvious peril," said Gary Stephenson, a spokesman for State Farm Insurance Co., which writes close to a third of Louisiana private property insurance business, and which for a time stopped writing policies in the hurricane-prone area south of Interstate 10.

Stakes rise with the seas

Louisiana's insurance difficulties are part of a larger problem shadowing the south Louisiana economy: There is more to lose and there are more ways to lose it than ever before.

More people, buildings, industrial sites and infrastructure sit in potential paths of destruction, and those paths are widening thanks to sinking and erosion.

"We are continuing to lose land, and each acre, each square mile lost increases the risk of significant damage during a storm," said engineer Peter Smith of the firm Waldemar S. Nelson, who is directing a study on the economic impact of erosion and storm hazards for the Army Corps of Engineers that will be completed next year.

In the New Orleans area, meanwhile, levees protect against smaller storms but can trap the floodwaters from large storms and create almost unimaginable — and unimaginably expensive — damage.

Louisiana hasn't seen a storm with damage in the billions of dollars since Hurricane Betsy in 1965. But the companies operating in the state face a sometimes perverse logic: If the odds favor something bad occurring in the future, it costs money in the present.

As waters have advanced, south Louisiana has begun to feel a growing economic pinch from higher insurance premiums, home-building costs and public and private outlays to try to hurricane-proof everything from roads to oil and gas facilities.

The economic dynamic is complex. In the short run, some spending may stimulate the local economy. But the geological forces eroding the Mississippi River delta cannot be stopped.

As costs rise, governments, businesses and individuals may ultimately have to weigh whether to keep spending or to give up.

Risk in south Louisiana varies depending on location. Towns in the marshes such as Cocodrie often flood but are small and don't rack up large-scale damage. However, a storm that floods the east bank of Orleans and Jefferson parishes, trapping water inside the levees, would cause damage on a scale unseen in the United States. Other places, such as St. Bernard or St. Charles parishes, fall somewhere between those extremes.

A 1998 report on Louisiana's insurance risks estimated the potential insured damage from a catastrophic storm at \$27 billion for just homeowner's and auto insurance, excluding flood damage and industrial and infrastructure losses sure to make up a large part of the cost. New Orleans insurance executive Woody Crews says a catastrophic flood in New Orleans and Jefferson Parish would result in \$100 billion to \$150 billion in damage, seven times the amount spent so far on the war in Afghanistan.

A generation ago or longer, those numbers would have been substantially lower. But today cities and towns sprawl over wider areas. More

WASHING AWAY

LOSING GROUND



STAFF PHOTO BY ELLIS LUCIA

The oil and gas industry's nerve center near the open Gulf in Port Fourchon will be particularly at risk when a major storm hits. The region has become increasingly exposed to the threat of flooding, storm surges and wind damage because of coastal erosion. Not only could a storm surge cause significant damage, but the port facilities are linked to the mainland by a two-lane road that likely will be washed out in a big storm.



STAFF FILE PHOTO BY ELLIS LUCIA

While some of the region's large industrial plants, such as the Union Carbide plant near Taft on the Bonnet Carre Spillway, face a danger from storm-surge flooding, chemical plants and other industry located farther inland on high ground face a different threat. In the next big storm, experts say, many plants may see unexpected damage from the high winds and tornadoes that a hurricane spins off.



STAFF FILE PHOTO BY THOM SCOTT

Keeping roads passable and homes dry is a constant battle for state, local and federal officials. Here, St. Charles Parish officials and the National Guard hastily constructed a 2-foot levee to keep floodwaters from Tropical Storm Frances away from homes on Up the Bayou Road in Des Allemands in September 1998.



STAFF PHOTO BY ELLIS LUCIA

The allure of waterfront property is strong for some. But the attraction to Gulf, canal, lake and river vistas carries a price tag. Braces like the ones used on this trailer just south of the Golden Meadow community on Louisiana 1 can help keep homes and fishing camps tethered during high winds.

paredness has offered a half-dozen such properties along Napoleon Avenue the opportunity to raise their homes at cut rates, thanks to a federal program that will underwrite 25 percent of the cost.

Industrial insurance has risen in tandem with private homeowner's insurance, adding a drag on the state's industries and governments. Recent coverage problems for school districts and parish governments may ease somewhat if no major catastrophes occur in the near future. But the long-term trend is toward higher rates and spottier coverage.

One reason for rising jitters is that erosion is encroaching on structures that were once well inland. This is a growing problem for oil and gas facilities built in the marshes that are now exposed to elements they were never designed to withstand.

"Pipelines running through marshes are under additional wave stress and becoming more and more exposed. So is infrastructure in the bays," said Greg Stone, a geologist with Louisiana State University's Coastal Studies Institute who is working on a computer modeling study of the problem for the state Department of Natural Resources. "If it needs to stay, it needs to be retrofitted; otherwise it may not survive. If a worst-case scenario (storm) came through, believe me, the existing infrastructure is not set up to withstand it."

Much of Louisiana's original oil and gas infrastructure was built in marshes, where the initial petroleum strikes were made. Even as most drilling moved offshore, a large network of pipelines, wellheads, relay stations and other facilities remained.

The landscape has changed around them, leaving aging facilities in open water, vulnerable to everyday wave action and the prospects of more frequent flooding and more punishing storm surges. Structures above the waterline may be in the path of debris loosed in a storm: mud, tree trunks, cars, tanks, even houses.

"If (a storm surge) is big enough, it will get up above the existing floor of platforms where the equipment is. So your equipment is more vulnerable," said Al Thomas, the president of PetroQuest Energy, a Lafayette oil and gas exploration company. "Today you'd design totally differently than you would 10 or 15 years ago, when you had a barrier island to take the brunt of a storm."

'A false sense of security'

The problem also shows up below the waterline. Most pipelines were originally buried more than 3 feet down. But many marshes are now open water. Waves and currents scour the bottom and expose pipelines, especially during storms. This has raised the threat of spills from pipeline damage because of snagged anchors and other hazards of ship traffic, and the possibility of debris striking pipelines in a storm.

The area's oil and gas distribution and service sites have the same problem on a much larger scale. They house strategically important concentrations of equipment that could be damaged in a storm and cause a temporary disruption in the flow of energy. And if they took major damage in a storm, Smith said, their owners might conclude they are better off moving to another staging area, such as Texas.

Port Fourchon, the large oil and gas service center perched near the open Gulf a few miles west of Grand Isle, is crucial to many of the central Gulf's offshore facilities. A major storm surge could cause big damage. Worse, the port is linked to the mainland by Louisiana 1, a two-lane road likely to be washed out in a major storm.

As roads sink, the state and local governments must repeatedly spend just to keep them open.

Most of the region's chemical plants and other large industrial facilities are built on high ground and are relatively safe from flooding. But they feel the effects of erosion in the form of higher hurricane winds, which sustain speed farther inland than they used to. In the next big storm, plants may see unexpected problems from wind damage, a study by LSU Hurricane Center director Mark Levitan shows.

Most industrial sites are designed to withstand the winds of a Category 3 storm, which run from 111 to 130 mph. The study found that different construction firms had different interpretations of building standards for hurricane-force winds, and that there probably are wide variations in the strength of structures. Because it has been decades since winds that high hit the area, the study concluded, "the experience of relatively minor damage to plants during Category 1 storms in this period has perhaps lulled many into a false sense of security."

John McQuaid can be reached at (202) 383-7889 or john.mcquaid@newhouse.com.

Mark Schiefelstein can be reached at (504) 826-3327 or mschiefelstein@timespicayune.com.

Building better

Requiring that new structures be designed to survive Category 3 and stronger hurricane winds would save lives as well as buildings, and in the long run would save homeowners money.

By Mark Schleifstein
Staff writer

JEFFERSON Parish officials found a disturbing flaw last year in their plans to open "refuges of last resort" for people stranded in a major hurricane: Only a few interior areas in a handful of public buildings could be trusted to withstand the 155- to 200-mph winds of a Category 5 storm.

"We were not really surprised," said Louisiana State University Hurricane Center director Marc Levitan, who oversaw an engineering assessment of the parish buildings. "Even in Florida, with their much more strict building codes, they've had serious problems with a deficit in safe shelter space."

New Orleans authorities decided to abandon similar refuge plans after concluding that up to 90 percent of the buildings in the city are vulnerable to damage from the most powerful hurricanes. Jefferson Parish is moving forward cautiously, knowing space will be limited for those left behind.

Emergency officials in both parishes say they are hoping to persuade people to evacuate rather than end up huddled in buildings that might dissolve or explode in the teeth of nature's most powerful force.

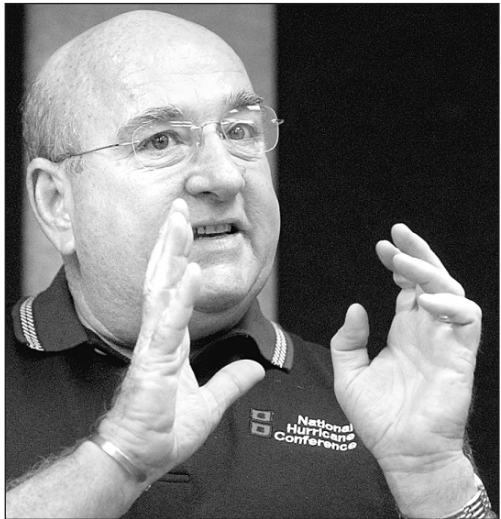
"We just don't have the structures in the metro area that are constructed to take that kind of wind," Jefferson Parish Office of Emergency Preparedness director Walter Maestri said. "Our building codes have not required us to build buildings capable of withstanding 170- to 200-mph winds, and engineers are now saying there may be

even higher winds. Here the standard is 100 mph. And of course a lot of our buildings, except for the newer buildings along Poydras Street (in New Orleans), were built prior to any code being in place at all."

But experts say that must change: As Florida upgraded its building code and strengthened enforcement after Hurricane Andrew in 1992 and California has long required buildings designed to survive major earthquakes, south Louisiana needs to make changes to protect property and provide basic shelter for those caught in the path of a killer storm.

"We at least ought to be looking at hardening (making buildings more resistant to high winds) as far as public buildings are concerned," said Hucky Purpera, chief of the natural and technical hazards division in the Louisiana Office of Emergency Preparedness. "Every high school that's built could become a shelter, or certainly a refuge of last resort to save lives."

Authorities say protection could



WALTER MAESTRI, Jefferson Parish Office of Emergency Preparedness director

"We just don't have the structures in the metro area that are constructed to take that kind of (Category 5) wind. ... Here the standard is 100 mph. And of course a lot of our buildings, except for the newer buildings along Poydras Street (in New Orleans), were built prior to any code being in place at all."

be greatly improved with some basic changes, including design and construction practices that would add as little as \$2,000 to the cost of a new home or to retrofitting an existing one.

"For wind damage, it's relatively

inexpensive to do these things, like hurricane clips and straps on beams and rafters to hold roofs on," Purpera said.

Next year the Southeast Louisiana Hurricane Task Force, which comprises city and parish emergency preparedness directors, will recommend that the Legislature consider requiring any new government buildings built south of Interstates 10 and 12 to be constructed to withstand the worst of hurricanes.

"They should be built to withstand a Category 5 hurricane, not only wind load, but from an elevation standpoint for storm surge," said Gerald Falgout, director of the St. James Parish Office of Emergency Preparedness and former chairman of the task force committee that is recommending the strengthened building requirement.

"There are things that can be done if some engineering takes place prior to a building being built."

The problems with structures considered as last-resort refuges in Jefferson Parish included wide expanses of glass that would allow

wind to "blow up" a building if debris smashed through the windows, walls built without reinforcing bars necessary to withstand 150-mph to 175-mph winds, and roof beams that were too long to guarantee they wouldn't collapse in such winds, LSU's Levitan said.

In many cases, water damage to roofs and walls also made the buildings too vulnerable to the effects of winds, he said.

The state-approved building code used in Jefferson Parish requires buildings to withstand the effects of winds blowing at 100 mph for three minutes. That's the equivalent of a shorter gust of wind blowing at 120 mph. A Category 3 hurricane can be accompanied by sustained winds of 130 mph and much stronger gusts.

Falgout said the Legislature shouldn't stop with strengthening requirements for public buildings. Building codes in the state should also be strengthened to reduce damage to private homes and businesses from such storms, he said.

Purpera agreed, saying California's building code has been strengthened several times during the past 20 years as officials learned more about how to protect buildings from the effects of earthquakes.

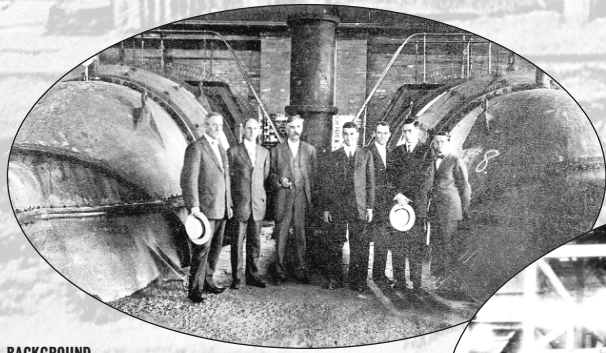
"We're way behind that, as far as preparing for a hurricane in Louisiana," Purpera said. "Architects aren't aware of what it takes to harden homes or buildings to withstand hurricanes in New Orleans, how to create a lot of individual refuges that could save lives."

Steven Bassett, a Palm Beach, Fla., mechanical engineer who helped Florida officials in their 10-year effort to rewrite the state's

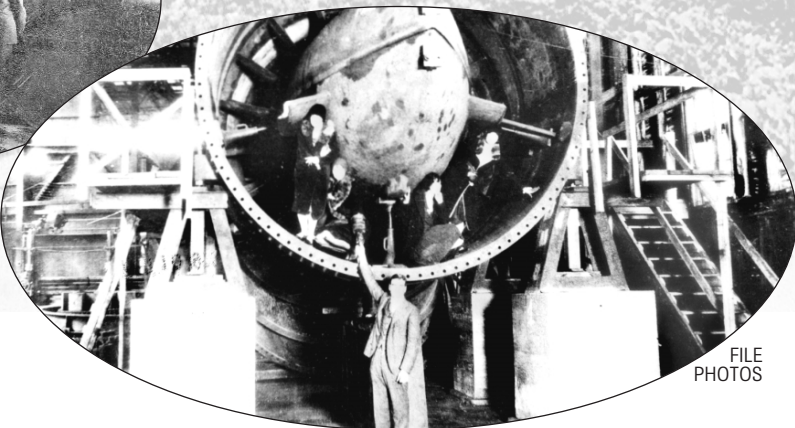
See **CODE, A-10**

STAYING DRY

Keeping water out of a city that's mostly below sea level is a full-time job. During typical rainstorms, giant screw-type pumps can clear streets generally within minutes, although a stronger storm can take longer. But if floodwaters from a hurricane topped a levee, New Orleans' pumping stations could be submerged in a matter of hours. With the pumps out of commission and their power source possibly disabled, it could take months to dry out.



BACKGROUND
CIRCA 1870 • In the 19th century, paddlewheel-powered pumping stations, like this one at South Claiborne and Melpomene avenues, were used to keep water off the streets.



1915 • The invention of the A.B. Wood screw pump revolutionized the city's drainage system. The city installed the first screw-type pumping station on Broad Street. The original pumps are still in use.

1928 • Nine larger pumps are installed 13 years later, and a city official commemorates the event with four flappers posing inside the pump near the 14-foot blades.

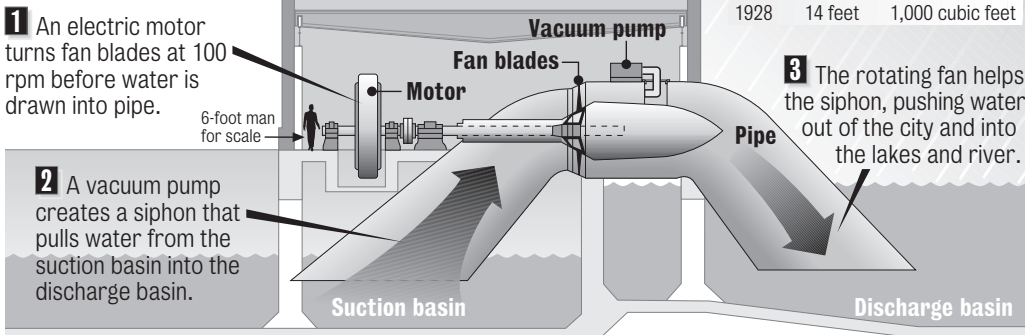


1991 • During the first five hours of a storm, the pumps can remove up to 5½ inches of rain before being overwhelmed. Here, a new pump — with 11-foot blades — is installed at Florida Avenue near the Industrial Canal.

STAFF FILE PHOTO BY G. ANDREW BOYD

THE CITY'S PUMPS

Every time it rains, the water must be pumped out — the price of living in a bowl. A look at the screw pumps that are integral to keeping New Orleans dry:

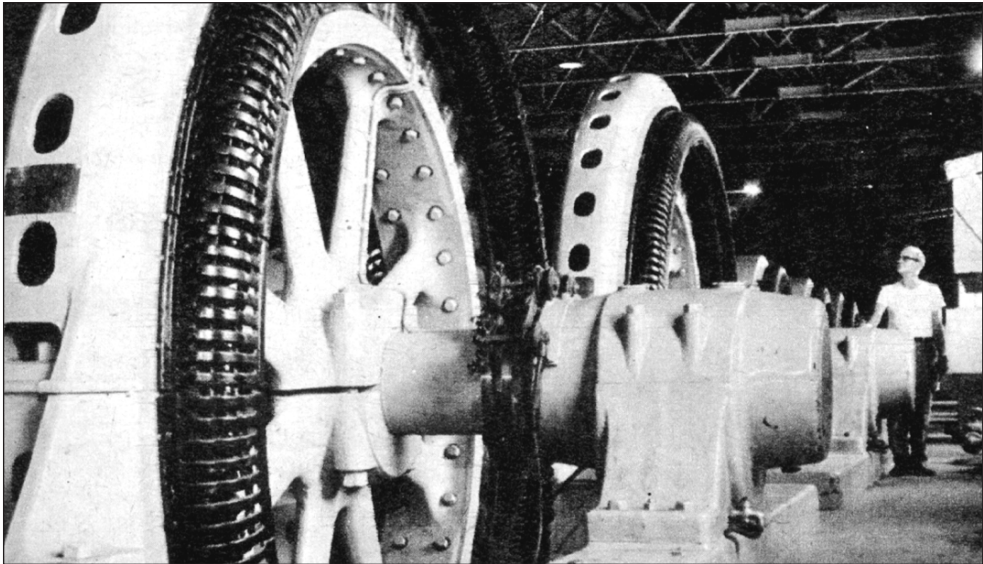


Source: Sewerage & Water Board

STAFF GRAPHIC

TALE OF TWO PUMPS
A.B. Wood designed two pumps that keep New Orleans from being perpetually waterlogged:

Date	Diameter near fan	Pumping rate per second
1913	12 feet	500 cubic feet
1928	14 feet	1,000 cubic feet



1972 • Giant motors propel the screw-type pumps, such as here in the Metairie Relief Canal pumping station. The motors are powered by the S&WB's own power grid.

STAFF FILE PHOTO BY G.E. ARNOLD

After Hurricane Floyd inundated parts of North Carolina in 1999, thousands were left homeless. Today, nearly three years later, some people are still living in temporary trailers.



Homes throughout Greenville, N.C., were inundated after the Tar River flooded during Hurricane Floyd. About 10,000 people were left homeless.

AP FILE PHOTO

Seeking shelter

By John McQuaid
Staff writer

ROCKY MOUNT, N.C.

GRIFFIN Clark's string of bad luck began when Hurricane Floyd flooded her out of her apartment in a small public housing development in Tarboro, N.C. Then an old foot injury acted up and she had to get orthopedic surgery. Unable to work for a time, she lost her job at an auto parts plant. Unable to pay the bills, she filed for bankruptcy. Amid the problems, she was unable to find a new place to live.

So for two years — long after Floyd had become just an unpleasant memory for most people — she stayed in a mobile home provided by the Federal Emergency Management Agency for storm refugees in Rocky Mount, about 20 miles west of Tarboro.

"It's not much, but it's home," she said, sitting on a couch and looking down at the tattered carpeting in the living room one day in November. "It's been rough being so far from my real home, my friends. I've been trying to get out, rent an apartment back in Tarboro. But there's no place to get out to."

Clark finally moved out in March, 30 months after the hurricane struck. With help from a federal relief program, she bought one of the used FEMA mobile homes on a plot in a park once used for storm refugees, now converted to private use, just outside of Tarboro.

When a disaster wrecks homes, the federal government steps in with temporary housing, considered a last resort for those who cannot find anywhere else to stay. The idea is to provide basic shelter until homes can be repaired or rebuilt. But when the damaged buildings are public housing units and rental apartments occupied by poor people, owners or agencies may be slow to rebuild. They may never come back at all. With nowhere else to go, people with few financial resources can end up in temporary housing for a very long time.

North Carolina's post-Floyd problems with poverty and temporary housing give a hint of what New Orleans could face on a much larger scale if a catastrophic storm swamps the city. North Carolina's experiences also provide a rough road map of what emergency managers here would have to do to address the needs of newly homeless residents.

Based on the North Carolina example, the state and federal governments would end up running what would be the largest public housing program in the nation's history, allocating money and other resources to maintain large trailer and mobile home parks while waiting for inexpensive, alternative housing to be rebuilt in the city. That might not take place for years, if it occurs at all.

North Carolina's temporary housing program was supposed to shut down after 18 months. But it was extended twice, and 33 months later it is still operating after a second deadline expired. Officials had whittled the numbers down to 69 families at the start of June, and they are hoping to end the program this summer.

Flood leaves 10,000 homeless

North Carolina's 1999 deluge bears a rough resemblance to the "filling the bowl" scenario in New Orleans. The hurricane came on the heels of a tropical storm that



STAFF PHOTO BY ELLIS LUCIA

North Carolina officials had expected to shut down their temporary housing program after 18 months, but 33 months later, there are nearly 70 families still living in temporary housing, such as here in Princeville, N.C.

dumped heavy rains and swelled local waterways. When Floyd strafed North Carolina — the worst hit among the East Coast states that were declared disaster areas — heavy rains, river flooding and a storm surge in coastal areas put 18,000 square miles of land under water. Dozens of towns were flooded, some for days, a few for weeks.

In Tarboro, "the roads filled up with water," Clark said. "There were frogs and snakes. I didn't have more than two days worth of clothes when we left. Water was coming up in the driveway. All we could see was water. It stayed up two to three weeks before we could get back in there. When we did, the whole apartment complex was flooded. What water didn't damage, mold got to. Steps collapsed. Everything was piled in the middle

of the floor."

The hurricane's widespread flooding initially left more than 10,000 people homeless and heavily damaged 15,000 homes. If the levees are topped on the east bank of Orleans, Jefferson and St. Bernard parishes, by contrast, the disaster would be more confined geographically but would affect more people and structures. More than a 100,000 dwellings would be heavily damaged. Hundreds of thousands of people would initially be left homeless.

Days after Hurricane Floyd, after everyone stranded was rescued and the waters receded, North Carolina emergency managers realized they had no plans for how to handle the massive needs of the dispossessed. In spite of that handicap, they managed to mobilize fast. They formed an interagency committee

to handle the response and manage the \$1.3 billion in disaster aid that would soon be coming through. They hired Doug Boyd, an ex-Army major, to run the program. Workers fanned out to canvass possible locations to build temporary trailer parks, preferably as cheaply as possible. FEMA initially moved in more than 1,800 travel trailers and, more gradually, 475 mobile homes to accommodate the approximately 5,000 people — about 2,000 families — in need.

South Louisiana would require a more massive national mobilization of resources, one that might even stress national inventories of trailers and mobile homes. FEMA and state agencies would truck thousands of those housing units into the region from points across the United States. Officials working on cata-

strophic disaster planning are looking at where the units might go and say it might have to be far from New Orleans — rural Mississippi, for example, something that might put commuters in a bind or force some to quit jobs, if their jobs still exist.

'Little towns' spring up

North Carolina officials set up 11 parks for travel trailers and the more permanent mobile homes. Some ended up in remote rural areas, others on unused properties in industrial areas on the edge of small towns — generally, the least desirable spots around. "If you have to live in temporary housing, you can have it at three locations," Boyd said. "First, the best if you are the homeowner, put it on your own property. Second, a commercial site, a trailer park, close to your home. Third, group parks. For renters we had to build group parks."

Setting up and maintaining the parks was a complex job. It involved installing utilities, ensuring police protection and dealing with the needs of individual families.

"You're building little towns," Boyd said. "So you've got sewer, electrical stuff. You have to build the infrastructure before people can move in. We had to put everything in place — had to build mailboxes, hire a transportation company to bring buses to take people to the hospital, grocery stores or other places they need to go."

The parks were crowded and unpleasant places to live, residents say. Some liken them to Third World refugee camps. "It was kind of like living in a neighborhood, but noisy," said Theresa Richardson, who lived in a park with her family for more than a year. "You were compacted together; everyone could hear your conversations, people walking by at all hours of the night."

For a time police units were assigned to some of the parks around the clock because of rampant crime. "You bring so many people close together, you got problems: domestic disturbances, drugs, prostitution," said Stan Ballantine, who manages the Fountain Industrial Park site.

Stuck with administering these quasi-towns, officials worked to move people out and shut them down. But that work has been slow and arduous because of a lack of affordable housing units for the poor. The sparsely populated rural area never had a lot of rental housing units, and now it has fewer.

"Eight or nine family public housing complexes were destroyed as a result of Hurricane Floyd," said Eric Tolbert, the state director of emergency management. "In some cases the rebuilding process hasn't been started. Of those facilities there is only one that has started leasing, letting residents back in. . . . The procedure to go through and get approval to rebuild those units took a long time. With private rentals, owners are not, for whatever reason, going to rebuild it or don't want to lease to the tenant again."

New Orleans has 20,000 people living in public housing. In the wake of disaster, it's unclear how, or if, the federal government would move to redevelop the property immediately. Renters would also face an empty market at first, then one that might be rebuilt to suit the needs of those with higher incomes.

"Anywhere you have a relatively poor population, they are typically renters, so they have little control over whether places are rebuilt," said Betty Morrow, a sociologist

See **NORTH CAROLINA, A-10**

